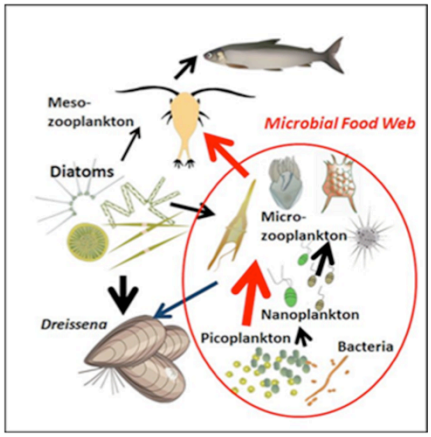
Ecosystem Dynamics Overview

Hank Vanderploeg
Ecosystem Dynamics



Observations → Experiments → Concepts → Models/Applications

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EcoDyn Essence & Guiding Principles

EcoDyn research strives to develop understanding and tools to improve capacity for managing water quality, fisheries, and ecosystem and human health.

Guiding Principles:

- Collaborative effort with focus on priority ecological problems in the Great Lakes.
- Quantitative measurements of important ecosystem variables at appropriate time and space scales
- Complement observations with experiments and models for understanding
- Develop forecasts and applications that are built on a solid foundation of empirical observations and understanding

In following these principles, EcoDyn completes all elements of the R&D production chain shown below

Observations → Experiments → Concepts → Models/Applications

Paraphrased from the GLERL Strategic Plan 2016-2020 found at: http://www.glerl.noaa.gov/review2016/reviewer_docs/GLERLStrategicPlan2016.pdf

Some Great Lakes Management Issues

Harmful and nuisance algal blooms nearshore

Sufficient carrying capacity for desirable fish production

Salmon *vs.* Asian Carp

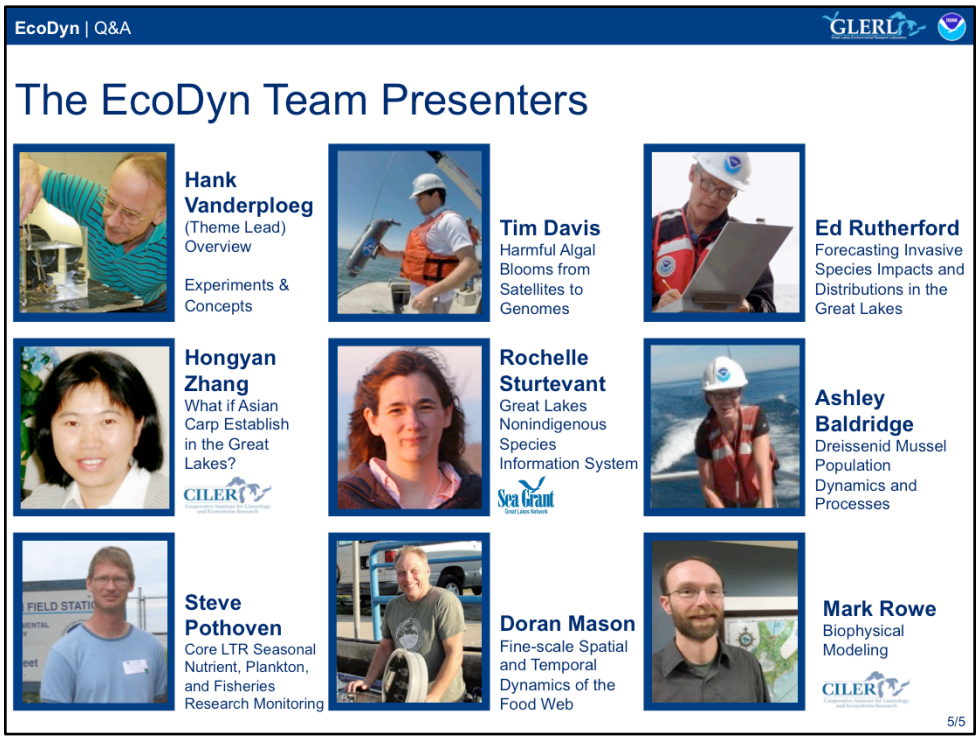
\+ How will climate change affect this?

From the GLERL Strategic Plan 2016-2020 found at: http://www.glerl.noaa.gov/review2016/reviewer_docs/GLERLStrategicPlan2016.pdf

Goals 1 & 2 Healtlhy Oceans
- Improved understanding of ecosystems to inform resource management decisions
- Sustainable fishersi and safe seafood for heatlhy populations and vibrant communities

Goal 3 Climate Adaptation and Mitigation
Improved scientific understanding of the changing climate system and its impacts

Goal 4 Resilient Coastal Communities and Economies
Improved coastal water quality supporting human health and coastal ecosystem services



The presenters are a mix of GLERL, CILER, and Sea Grant folks who are reporting out on significant ongoing research of interest. Much EcoDyn's base-funded research is focused on subprojects associated with observations, experiments, and modeling associated with the LTR program. Expansion of the LTR program in some years has been supported by the Coordinated Science and Monitoring Initiative (CSMI). The program on HABs, the other major focus of the group, is heavily supported by GLRI. GLANSIS and work on Asian carps have also been subsidized by external funds.

The EcoDyn group federal PI staff includes: Hank Vanderploeg, Ashley Baldridge, Tim Davis, Doran Mason, Steve Pothoven, and Ed Rutherford

The federal support staff includes: Joann Cavaletto, Dave Fanslow, Duane Gossiaux, Nancy Morehead
We are also heavily dependent on CILER and contract support staff.

You will get a chance to meet the support staff during the lab tour and one-on-one session with support folks.